

Claims:

1. A double-sided image film screen having a projection structure,  
comprising:  
5       a transparent material made of one selected from the group consisting of  
polyester, acryl and polycarbonate; and  
      a light-refracting material, made of silica, contained in or deposited on the  
transparent material,  
      wherein a content and a particle size of the light-refracting material and a  
10       thickness of the film screen mutually interact so that an image formed on the film  
screen by means of light projected from a projector is dividedly displayed on front  
and rear surfaces of the film screen, thereby displaying the image formed thereon  
though the front and rear surfaces thereof and eliminating a hot spot.
2. The double-sided image film screen as set forth in claim 1, wherein:  
15       the content (C) of the light-refracting material in the film screen is in the  
range of range of 800ppm to 90,000ppm;  
      the particle size (B) of the light-refracting material is in the range of  $0.1\mu\text{m}$   
to  $50\mu\text{m}$ ; and  
      the thickness (A) of the film screen is in the range of  $10\mu\text{m}$  to  $400\mu\text{m}$ .
- 20       3. The double-sided image film screen as set forth in claim 1 or 2,  
wherein:  
      a rotary rod is installed at an upper end of the film screen; and  
      the film screen is rolled up into and down from the rotary rod, and serves  
as a rolled-type screen.
- 25       4. The double-sided image film screen as set forth in claim 1 or 2,  
wherein the film screen is fixed to a transparent plate so that the film screen  
can be transferred upward and downward by means of a rotary rod.
5. The double-sided image film screen as set forth in claim 1 or 2,  
30       wherein the film screen is attached to a glass window so that viewers at

outdoor and indoor places can view the film screen through both surfaces thereof.

6. The double-sided image film screen as set forth in claim 1 or 2,  
wherein a projector is installed under the film screen and a reflecting mirror  
is installed in front of the projector to prepare one video system so that viewers can  
5 view an image displayed on the front and rear surfaces of the film screen.

7. The double-sided image film screen as set forth in claim 1 or 2,  
wherein a reflection plane is formed on one surface of the film screen so  
that the film screen serves as a reflection-type screen without the generation of a hot  
spot.

10 8. The double-sided image film screen as set forth in claim 1 or 2,  
wherein the light-refracting material of the film screen is a light-  
transmitting material made of titania ( $\text{TiO}_2$ ).

9. The double-sided image film screen as set forth in any one of claims 1  
to 8,

15 wherein a pigment thin film having one color, selected from the group  
consisting of brown, dark blue and black, is formed on one surface of the film  
screen.

10. The double-sided image film screen as set forth in claim 1 or 2,  
wherein the film screen is divided into front and rear film sub-screens  
20 centering on a transparent plate under the condition that the total thickness of the  
film screen, the content and the particle size of the light-refracting material in the  
film screen satisfy the allowable ranges.